

(5.) *Patula strigosa* Gld. var. *intersum*.

Shell umbilicated, sublenticular, depressed, thin, dark horn color, more or less stained with darker chestnut. Whorls $5\frac{1}{2}$ or 6, somewhat flattened above, more convex beneath, obtusely carinated at the periphery and bearing numerous coarse oblique rib-like striae, and two dark revolving bands; suture well impressed; umbilicus large, pervious; aperture oblique, subangulated; lip simple, thickened, its terminations joined by a thick callus.

Height of the largest specimen $\frac{1}{2}$ inch, breadth $\frac{3}{4}$ inch.

Height of the smallest specimen $\frac{5}{16}$ inch, breadth $\frac{7}{16}$ inch.

Habitat. Bluffs along the banks of little Salmon River, Idaho.

REMARKS.—This shell inhabits stone piles at the foot of a steep bluff back some distance from the river. It seems to be quite rare as I found but few specimens during the two or three days of my stay in its vicinity, and many of them were dead. I regard it as one of the most interesting shells found by me during the season, for it combines the depressed angulated or keeled forms of the *Haydeni* side of the series, with the sculpturing of *Idahoensis*, two shells representing opposite characters in every respect. It thus becomes the companion of *Wahsatchensis*, a beautiful shell combining the same characters, but much more developed and connected with the large elevated forms. Var. *intersum* fills the opposite office by uniting these characters with the small depressed forms. Taken as a whole, this series of shells as now completed, seems to me to offer the best guide or key to the study of species that the student can have. Every known external character belonging to the genus *Helix*, is so gradually modified and blended with opposite characters, that if one had the molding or making of the many and various intermediate forms, he could scarcely make the series more complete than nature has done herself.

NOTES ON SOME NORTHERN PUPIDAE WITH DESCRIPTION OF A
NEW SPECIES.

BY DR. V. STERKI.

Vertigo tridentata Wolf.

Has a wide distribution in the northern part of the country; originally found in Illinois, it has been collected in different parts of

Ohio and New York, as well as in Minnesota and Colorado. In general it is remarkably constant in its characters; yet there are slight differences; here I found a few examples from low ground, together with *V. ovata*; they were a trifle larger, with a thicker and deeper colored shell than those from upland places.

Vertigo Oscariana Sterki.¹

In drift with numerous minute shells, from Guadalupe River, Texas, kindly sent by Wm. A. Marsh, I found one specimen of this species, which, consequently, is not confined to eastern Florida, where it was detected by Messrs. Webster, but may be widely spread over the southern part of our country.

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It may be appropriate to add here some notes concerning a few forms of *Vertigo* which, in my opinion, represent new species, but of which the specimens extant are not sufficient for a formal publication. By this, I expect to obtain, possibly, more material in order either to confirm the species or refer the forms to their nearest relatives.

In 1887, Mr. A. A. Hinkley, of DuBois, Ill., sent me, with other Pupidæ, one specimen of a *Vertigo*, probably new, and in 1889 another of the same; the said gentleman and Mr. Wm. A. Marsh kindly forwarded me all their Pupidæ, for examination, but so far I found no other example; yet I am satisfied such will be found. The form is related to *Vertigo ovata* and *Gouldii*, but different and is characterized by the two palatal lamellæ being close together, for what reason I gave it the *miss.* name *V. approximans*.

Among several hundred small Pupidæ collected in Northeastern Ohio (Summit and Lake counties) by Mr. A. Pettingell, there were two examples of a doubtless new species, which I in the same way named *V. parvula*. It is about of the size, shape and appearance of *V. (Angustula) milium* Gld.; but ranges in quite another group, having a quite simple palatal wall and margin, and only 3 lamellæ.

In Texas, *Vertigos* seem to be decidedly rare. In many hundreds of Pupidæ from that state Mr. J. A. Singley and Mr. Wm. A. Marsh kindly forwarded me, there were only about half a dozen such; a few *milium*, one *rugosula*, m, one *oscariana*, as mentioned above, and one specimen of a form which probably will prove to be a new species of quite a peculiar formation.

¹ L. c.

One single specimen of a decidedly new and interesting form was among those Pupidæ from Albuquerque, N. M., sent by Mr. L. B. Elliott. The whole formation is that of a *Vertigo*, but it is purely albino (*i. e.*, colorless or white); the only one of this kind in the genus. Its altitude is 1.6 mm.; the lamellæ are nearly those of *V. Binneyana*, but the palatal wall has quite a different configuration, and the whorls except the last are regularly striate.

New Philadelphia, Pa., Feb. 10, 1890.

ANNOTATED LIST OF THE SHELLS OF ST. AUGUSTINE, FLA.

BY C. W. JOHNSON.

Bythinella tenuipes Couper. Common in a small stream near the city and at Tocoi on the St. John's River.

Amnicola granum Say. Common in the upper part of Moultrie Creek.

Paludina georgiana Lea. Common in tributaries of the St. John's, west of St. Augustine.

Campeloma lima Anth. Found with the above, but not as plentiful.

Ampullaria depressa Say. Common with the two preceding species. A less depressed variety is found in a swamp near Matanzas Inlet.

Helicina orbiculata Say. Common.

Nerita peloronta L. One living specimen on the water battery of Fort Marion.

Nerita versicolor Lam. Two living specimens. I believe this is the most northern locality recorded for *Nerita* on the Atlantic Coast.

Neritina reclinata Say. Common at the mouth of small fresh water streams.

Neritina virginea L. A number of specimens found in brackish water near Matanzas.

Fissurella alternata Say. Common.

Actæon punctatus d'Orb. One specimen.

Tornatina canaliculata Say. Not common.

Aplysia protea Rang. Common at low-water on a bar at the mouth of Hospital creek.